

**What is claimed is:**

1. A method for modulating metabolism of ciprofloxacin-resistant and/or *Streptococcus pneumoniae* comprising the step of contacting ciprofloxacin-resistant *Streptococcus pneumoniae* with an antibacterially effective amount of a composition comprising a gemifloxacin compound, or antibacterially effective derivatives thereof.
- 5 2. The method of claim 1 wherein said ciprofloxacin-resistant *Streptococcus pneumoniae* is ciprofloxacin-resistant *Streptococcus pneumoniae* having an MIC  $\geq 8 \mu\text{g/ml}$  of ciprofloxacin.
- 10 3. A method of treating or preventing a bacterial infection by ciprofloxacin-resistant *Streptococcus pneumoniae* comprising the step of administering an antibacterially effective amount of a composition comprising a gemifloxacin compound to a mammal suspected of having or being at risk of having an infection with ciprofloxacin-resistant *Streptococcus pneumoniae*.
- 15 4. The method of claim 3 wherein said ciprofloxacin-resistant *Streptococcus pneumoniae* is ciprofloxacin-resistant *Streptococcus pneumoniae* having an MIC  $\geq 8 \mu\text{g/ml}$  of ciprofloxacin.
5. The method of claim 1 wherein said modulating metabolism is inhibiting growth of said bacteria.
- 20 6. The method of claim 1 wherein said modulating metabolism is killing said bacteria.
7. The method of claim 1 wherein said contacting said bacteria comprises the further step of introducing said composition into a mammal.
- 25 8. The method of claim 3 wherein said mammal is a human.
9. The method of claim 7 wherein said mammal is a human.
10. The method of claim 8 wherein said bacteria is selected from the group consisting of: ciprofloxacin-susceptible pneumococci having an MIC  $\leq 4 \mu\text{g/ml}$  of ciprofloxacin; ciprofloxacin-resistant pneumococci having an MIC  $\geq 8 \mu\text{g/ml}$  of ciprofloxacin;
- 30 ciprofloxacin-susceptible *Streptococcus pneumoniae* having an MIC  $\leq 4 \mu\text{g/ml}$  of ciprofloxacin; and, ciprofloxacin-resistant *Streptococcus pneumoniae* having an MIC  $\geq 8 \mu\text{g/ml}$  of ciprofloxacin.
11. The method of claim 9 wherein said bacteria is selected from the group



consisting of: ciprofloxacin-susceptible pneumococci having an MIC  $\leq 4 \mu\text{g}/\text{ml}$  of ciprofloxacin;

ciprofloxacin-resistant pneumococci having an MIC  $\geq 8 \mu\text{g}/\text{ml}$  of ciprofloxacin;

ciprofloxacin-susceptible *Streptococcus pneumoniae* having an MIC  $\leq 4 \mu\text{g}/\text{ml}$  of ciprofloxacin; and

ciprofloxacin-resistant *Streptococcus pneumoniae* having an MIC  $\geq 8 \mu\text{g}/\text{ml}$  of ciprofloxacin.

5           12. A method for modulating metabolism of ciprofloxacin-sensitive *Streptococcus pneumoniae* comprising the step of contacting ciprofloxacin-sensitive *Streptococcus pneumoniae* with an antibacterially effective amount of a composition comprising a gemifloxacin compound, or antibacterially effective derivatives thereof.

10          13. The method of claim 12 wherein said ciprofloxacin-sensitive *Streptococcus pneumoniae* is a ciprofloxacin-susceptible pneumococci having an MIC  $\leq 4 \mu\text{g}/\text{ml}$  of ciprofloxacin.

15          14. A method of treating or preventing a bacterial infection by ciprofloxacin-sensitive *Streptococcus pneumoniae* comprising the step of administering an antibacterially effective amount of a composition comprising a gemifloxacin compound to a mammal suspected of having or being at risk of having an infection with ciprofloxacin-sensitive *Streptococcus pneumoniae*.

20          15. The method of claim 14 wherein said ciprofloxacin-sensitive *Streptococcus pneumoniae* is ciprofloxacin-susceptible *Streptococcus pneumoniae* having an MIC  $\leq 4 \mu\text{g}/\text{ml}$  of ciprofloxacin.

25          16. The method of claim 12 wherein said modulating metabolism is inhibiting growth of said bacterial.

17. The method of claim 12 wherein said modulating metabolism is killing said bacterial.

30          18. The method of claim 12 wherein said contacting said bacterial comprises the further step of introducing said composition into a mammal.

19. The method of claim 14 wherein said mammal is a human.

20. The method of claim 18 wherein said mammal is a human.

21. The method according to Claim 1, 3, 12, or 14 wherein the gemifloxacin compound is gemifloxacin or a pharmaceutically acceptable salt thereof.

22. The method according to claim 21 wherein the gemifloxacin compound is gemifloxacin mesylate or a hydrate thereof.



23. The method according to claim 22 wherein the gemifloxacin compound is gemifloxacin mesylate sesquihydrate.